

REMARKS

This Response is submitted in reply to the Official Letter dated March 8, 2006. Claims 1, 12, 15, 18, 20 through 22 and 25 have been amended. New claims 26 through 30 have been added. Previously, claims 4, 16 and 17 were cancelled. The application now includes claims 1 through 3, 5 through 15 and 18 through 30, with claims 1, 15 and 18 being independent claims. Favorable reconsideration of the application is respectfully requested.

The courtesy of the Examiner in granting a telephone interview with the undersigned attorney on March 29, 2006, is gratefully acknowledged. The Examiner's comments and suggestions were most helpful and have been incorporated in the above amended claims and the following remarks.

In the Official Letter, the Examiner rejected claims 1, 2, 5, 15 and 23 35U.S.C. §102(b) as being anticipated by US Patent No. 5,233,259 to Krishnaswamy et al. Regarding independent claims 1 and 15, the Examiner stated that the Krishnaswamy reference discloses an acoustic wave sensor having all of the limitations recited in the claims, to include a sensing surface adapted to be immersed in a measurand of interest, as recited in the claims. The Examiner also stated that an element that is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform.

Applicant has amended independent claims 1 and 15 to recite a sensing surface in contact with a fluid containing a measurand of interest. Applicant believes that the Krishnaswamy reference discloses, in Fig. 5, a piezoelectric film 50 disposed upon a thinned layer of a substrate material 52 with two electrodes 54 and 56 disposed upon the piezoelectric film 50 opposed from the semiconductor material 52. The Krishnaswamy reference also discloses, in Fig. 9, an alternate embodiment having a similar structure that has an additional ground electrode 97. Therefore, in both embodiments disclosed in the reference, the non-electrode carrying surface of the piezoelectric material, which corresponds to the sensing surface recited in claims 1 and 15, is disposed upon the semiconductor material and can not be immersed a fluid containing a measurand of interest, as recited in amended claims 1 and 15. Indeed,

because the non-electrode carrying surface of the piezoelectric material is disposed upon a substrate in the Krishnaswamy reference, applicant believes that the reference actually teaches away from the structure recited in claims 1 and 15. During the telephonic interview, the Examiner agreed that the amended claims would discern over the cited prior art. Accordingly, applicant believes that amended independent claims 1 and 15 are not anticipated by the Krishnaswamy reference and respectfully requests that the Examiner withdraw her rejection of the claims.

In the Official Letter, the Examiner also rejected independent claims 12 through 14, 18 and 19 under 35 U.S.C 103(a) as being unpatentable over the Krishnaswamy reference in view of US Patent No. 4,361,026 to Muller. Regarding independent claim 18, the Examiner stated that the Krishnaswamy reference discloses the limitations as disclosed in paragraph 4 of the Official Letter. Because item 4 is a quote of 35 U.S.C 103(a), applicant assumes that the Examiner intended to refer to paragraph 3 of the Official Letter, which concerns the rejection of claims as being anticipated by the Krishnaswamy reference. The following discussion is based upon this assumption. The Examiner then continued by stating that the limitation of a variable voltage supply, as recited in claim 18, is inherent in the disclosure of a voltage potential in column 3, lines 42 through 45, of the Krishnaswamy reference. The Examiner also stated that the Muller reference disclosed a voltage supply that is operative to sweep through a predetermined frequency range and that it would have been obvious to combine the Krishnaswamy and Muller references to obtain the apparatus recited in independent claim 18.

Applicant has also amended independent claim 18 to recite a sensing surface in contact with a fluid that contains a measurand. As described above, applicant believes that, due to the non-electrode carrying surface of the piezoelectric film 50 being deposited upon a substrate, the Krishnaswamy reference actually teaches away from the structure recited in claim 18. Furthermore, even if the Krishnaswamy reference is combined with the Muller reference, the resulting device will not have the structure recited in independent claim 18. During the telephonic interview, the Examiner agreed that amended claim 18 would discern over the cited prior art. Accordingly, for

the reasons given above, applicant believes that independent claim 18 is patentable over the art of record and respectfully requests that the Examiner withdraw her rejection of the claim.

Regarding the dependent claims, applicant has amended claims 12 and 20 through 22 to be consistent with amended independent claims 1 and 18. Applicant also has amended claim 25 to correct a typographical error. Claims 2 and 5 through 14 are dependent upon amended independent claim 1 and thereby include all of the limitations recited therein. Similarly, claims 19 through 22 are dependent upon amended independent claim 18 and include all of the limitations recited therein while claims 23 through 25 are dependent upon amended independent claim 15 and include all of the limitations recited therein. Accordingly, for the reasons given above, applicant also believes that claims 2, 5 through 14 and 19 through 25 are patentable over the art of record and respectfully requests that the Examiner withdraw her rejection of the claims.


Applicant has added new dependent claims 26 through 30 that recite that the fluid recited in the corresponding base claim is one of either a liquid or a fluid. The new claims are supported by specification, which states, in paragraph [0046], that:

While the environment 81 is shown as a liquid in Fig. 9, it will also be appreciated that the environment also may be a gas (not shown).

Therefore, new claims 26 through 30 add no new material. Additionally, new claims 26 and 27 are dependent upon amended independent claim 1 and include all of the limitations recited therein. Similarly, new claims 28 and 29 are dependent upon amended independent claim 15 and include all of the limitations recited therein, while new claim 30 is dependent upon amended independent claim 18 and includes all of the limitations recited therein. Accordingly, for the reasons given above, applicant also believes that new claims 26 through 30 are patentable over the art of record and respectfully requests that the Examiner allow the claims.

In view of the above remarks, it is believed that the application is in condition for allowance.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John B. Molnar", is written over a horizontal line.

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